



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,853	03/30/2004	Qinghua Li	884.C50US1	5604
21186	7590	11/15/2007	EXAMINER	
SCHWEGMAN, LUNDBERG & WOESSNER, P.A.			MERED, HABTE	
P.O. BOX 2938			ART UNIT	PAPER NUMBER
MINNEAPOLIS, MN 55402			2616	
MAIL DATE		DELIVERY MODE		
11/15/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/814,853	LI ET AL.	
	Examiner	Art Unit	
	Habte Mered	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1:136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 8/25/2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 1-26 is/are allowed.

6) Claim(s) _____ is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other: _____

DETAILED ACTION

1. The amendment filed on 08/23/2007 has been entered and fully considered.
2. Claims 1-26 are pending. Claims 1, 8, 14, 19, and 22 are the base independent claims.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Apparatus, Systems, and Methods for the reception and synchronization of asynchronous signals.

Claim Objections

Claim 19 is objected to because of the following informalities: in line 7 of claim 19 the phrase "in a frequency domain" is erroneous because IFFT does not separate any data in a frequency domain and rather operates in a time domain. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-14, 16-18, and 22-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shattil (US Pub. No. 2004/0086027) in view of Priotti (US Pub. No. 20040120410).

Shattil teaches orthogonal superposition coding for direct sequence communication.

2. Regarding claim1, Shattil discloses a method (Figures 4I, 4J, and 10B), including: converting a combined plurality P of asynchronous data streams received at substantially the same time (Figures 4I and 4j the asynchronous data streams by Rx and in paragraph 138 Shattil discloses multiple antennas can exist giving multiple asynchronous data streams and in fact Figure 10 B shows multiple asynchronous data streams identical to Applicant's Figure 2. Further the Applicant in the specification in paragraph 2 has indicated SDMA system is technically asynchronous and hence Shattil shows his system supports SDMA as stated in paragraph 37 and is effectively asynchronous.) from a first time domain to a frequency domain (In Figures 4J and 10B, the asynchronous signals Rx are directly fed to and FFT or DFT to convert each of the Rx asynchronous composite signals from time domain to frequency domain); separating, the combined plurality P of asynchronous data streams into a separated plurality of data streams in the frequency domain (In Figure 4J and 10B 1...M composite asynchronous Rx signals are separated into N data streams in the frequency domain and for further illustration see paragraphs 141, 142, 186, and 187. Further it should be noted that Shattil teaches a second time domain as the output of Figure 4J's 462 is M data streams in the time domain as the combiners and integrators serve as an IFFT as illustrated in paragraphs 142 and 193.)

Shattil fails to teach synchronizing at least one of the separated plurality of data streams in a second time domain.

Priotti teaches apparatus and associated method for effectuating post-FFT correction of fine frequency offset.

Priotti teaches synchronizing at least one of the separated plurality of data streams in a second time domain. (See Paragraph 43 and Figure 1, element 116. It should be noted here that neither a receiver or a transmitter is claimed and hence element 116 of Figure 1 can be considered a second time domain synchronization taking into consideration the first time domain conversion at the transmitter.

Never the less, Priotti clearly teaches synchronization in the time domain.

Applicant correctly indicates in paragraph 46 of the specification that synchronization in time domain is conventional and hence well known in the art.

Priotti shows in Figure 1 that the various user signals combined in time when received at the receiver is synchronized in time domain. Applicant indicates in paragraph 9 of the specification the need to do the well-known technique of synchronization in the time domain in a second time domain simply because separating asynchronous signals in time domain is a complex task without really explaining why or citing a prior art for support. However, the Applicant has not taught a new technique of synchronization apart from what is taught by Priotti and which is known in the art and also multiplexing and demultiplexing different user signals in time domain is well known in the art and hence synchronizing in a first or second time domain is simply a design decision.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shattil's method to incorporate the step of synchronizing at least one of the separated pluralities of data streams in a second time domain. The motivation to synchronize in the time domain prior to preprocessing the signals in the receiver or post- processing the signals in the receiver is to prevent errors in the future due to lack of synchronization.

3. Regarding **claim 8**, Shattil discloses an article including a machine-accessible medium having associated information, wherein the information, when accessed, results in a machine performing (**Figures 4I, 4J, and 10B**),: converting a combined plurality P of asynchronous data streams received at substantially the same time (**Figures 4I and 4j the asynchronous data streams by Rx and in paragraph 138 Shattil discloses multiple antennas can exist giving multiple asynchronous data streams and in fact Figure 10 B shows multiple asynchronous data streams identical to Applicant's Figure 2. Further the Applicant in the specification in paragraph 2 has indicated SDMA system is technically asynchronous and hence Shattil shows his system supports SDMA (paragraph 37) and is effectively asynchronous.**) from a first time domain to a frequency domain (**In Figures 4J and 10B, the asynchronous signals Rx are directly fed to and FFT or DFT to convert each of the Rx asynchronous composite signals from time domain to frequency domain**); separating the combined plurality P of asynchronous data streams into a separated plurality of data streams in the frequency domain (**In Figure 4J and 10B 1...M composite asynchronous Rx signals are separated into N data streams in the**

frequency domain and for further illustration see paragraphs 141, 142, 186, and 187. Further it should be noted that Shattil teaches a second time domain as the output of Figure 4J's 462 is M data streams in the time domain as the combiners and integrators serve as an IFFT as illustrated in paragraphs 142 and 193.).

Shattil fails to teach synchronizing at least one of the separated plurality of data streams in a second time domain.

Priotti teaches synchronizing at least one of the separated plurality of data streams in a second time domain. (See Paragraph 43 and Figure 1, element 116. It should be noted here that neither a receiver or a transmitter is claimed and hence element 116 of Figure 1 can be considered a second time domain synchronization taking into consideration the first time domain conversion at the transmitter.

Never the less, Priotti clearly teaches synchronization in the time domain.

Applicant correctly indicates in paragraph 46 of the specification that synchronization in time domain is conventional and hence well known in the art. Priotti shows in Figure 1 that the various user signals combined in time when received at the receiver is synchronized in time domain. Applicant indicates in paragraph 9 of the specification the need to do the well-known technique of synchronization in the time domain in a second time domain simply because separating asynchronous signals in time domain is a complex task without really explaining why or citing a prior art for support. However, the Applicant has not taught a new technique of synchronization apart from what is taught by Priotti and which is known in the art and also multiplexing and demultiplexing different

user signals in time domain is well known in the art and hence synchronizing in a first or second time domain is simply a design decision.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shattil's article to incorporate the step of synchronizing at least one of the separated pluralities of data streams in a second time domain. The motivation to synchronize in the time domain prior to preprocessing the signals in the receiver or post- processing the signals in the receiver is to prevent errors in the future due to lack of synchronization.

4. Regarding **claim 14**, Shattil discloses an apparatus (**Figures 4I, 4J and 10B**), including: a module to separate, in a frequency domain, a combined plurality P of asynchronous data streams received at substantially a same time (**Figures 4I and 4J**) **the asynchronous data streams by Rx and in paragraph 138 Shattil discloses multiple antennas can exist giving multiple asynchronous data streams and in fact Figure 10 B shows multiple asynchronous data streams identical to Applicant's Figure 2. Further the Applicant in the specification in paragraph 2 has indicated SDMA system is technically asynchronous and hence Shattil shows his system supports SDMA (paragraph 37) and is effectively asynchronous.)** into a separated plurality of data streams (**In Figure 4J and 10B 1...M composite asynchronous Rx signals are separated into N data streams in the frequency domain and for further illustration see paragraphs 141, 142, 186, and 187. Further it should be noted that Shattil teaches a second time domain as the output of Figure 4J's 462 is M data streams in the time domain as the combiners and**

integrators serve as an IFFT as illustrated in paragraphs 142 and 193.), after the combined plurality P of asynchronous data streams have been converted from a first time domain to the frequency domain (In Figures 4J and 10B, the asynchronous signals Rx are directly fed to and FFT or DFT to convert each of the Rx asynchronous composite signals from time domain to frequency domain)

Shattil fails to disclose an apparatus with a synchronization module to synchronize at least one of the separated plurality of data streams in a second time domain.

Priotti teaches an apparatus with a synchronization module to synchronize at least one of the separated plurality of data streams in a second time domain. (See Paragraph 43 and Figure 1, element 116. It should be noted here that neither a receiver or a transmitter is claimed and hence element 116 of Figure 1 can be considered a second time domain synchronization taking into consideration the first time domain conversion at the transmitter. Never the less, Priotti clearly teaches synchronization in the time domain. Applicant correctly indicates in paragraph 46 of the specification that synchronization in time domain is conventional and hence well known in the art. Priotti shows in Figure 1 that the various user signals combined in time when received at the receiver is synchronized in time domain. Applicant indicates in paragraph 9 of the specification the need to do the well-known technique of synchronization in the time domain in a second time domain simply because separating asynchronous signals in time domain is a complex task without really explaining why or citing a

prior art for support. However, the Applicant has not taught a new technique of synchronization apart from what is taught by Priotti and which is known in the art and also multiplexing and demultiplexing different user signals in time domain is well known in the art and hence synchronizing in a first or second time domain is simply a design decision.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shattil's apparatus by incorporating a synchronization module to synchronize at least one of the separated pluralities of data streams in a second time domain. The motivation to synchronize in the time domain prior to preprocessing the signals in the receiver or post- processing the signals in the receiver is to prevent errors in the future due to lack of synchronization.

5. Regarding **claim 22**, Shattil discloses a system including, a module to separate, in a frequency domain (**Figures 4J and 10B**), a combined plurality P of asynchronous data streams received at substantially a same time into a separated plurality of data streams (**M Rx composite asynchronous data streams are shown in the Figures**), after the combined plurality P of asynchronous data streams have been converted from a first time domain to the frequency domain (**the M Rx signals are fed to an FFT or DFT to be converted in the frequency domain**); and a plurality Q of antennas to receive the combined plurality P of asynchronous data streams. (**See Figures 10b – you have M Rx signals and hence M antennas but definitely there will be situations when you have less than M RX signals coming into the M antennas**)

Shattil fails to disclose an apparatus with a synchronization module to synchronize at least one of the separated plurality of data streams in a second time domain.

Priotti teaches an apparatus with a synchronization module to synchronize at least one of the separated plurality of data streams in a second time domain. (See **Paragraph 43 and Figure 1, element 116.**)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shattil's system by incorporating a synchronization module to synchronize at least one of the separated pluralities of data streams in a second time domain. The motivation to synchronize in the time domain prior to preprocessing the signals in the receiver or post- processing the signals in the receiver is to prevent errors in the future due to lack of synchronization.

6. Regarding **claim 2**, Shattil discloses a method further including separating the combined plurality P of asynchronous data streams using a channel matrix. (See **Figure 5B and Paragraph 145**)

7. Regarding **claim 3**, Shattil discloses a method, further including: receiving, at substantially the same time, the combined plurality P of asynchronous data streams at a plurality Q of antennas. (**Figures 4I and 4j the asynchronous data streams by Rx and in paragraph 138 Shattil discloses multiple antennas can exist giving multiple asynchronous data streams and in fact Figure 10 B shows multiple asynchronous data streams identical to Applicant's Figure 2. Further the Applicant in the specification in paragraph 2 has indicated SDMA system is technically**

asynchronous and hence Shattil shows his system supports SDMA (paragraph 37) and is effectively asynchronous.)

8. Regarding **claim 4**, Shattil discloses a method, further including: separating the combined plurality P of asynchronous data streams into the separated plurality of data streams in the frequency domain using a frequency spatial demapper. **(See Figure 10b and 4J, all the mapping done in the frequency domain is done by a frequency demapper by definition)**

9. Regarding **claim 5**, Shattil discloses a method, wherein the separated plurality of data streams corresponds directly to a number of wireless channels. **(See Figure 10 B – M Rx antennas and M data streams in the time domain in CBD 1 to CBD M)**

10. Regarding **claims 6 and 18**, the combination of Shattil and Priotti discloses a method wherein at least one of the separated plurality of data streams is formatted according to one of an Institute of Electrical and Electronics Engineers 802.11 standard and an Institute of Electrical and Electronics Engineers 802.16 standard. **(See Shattil paragraph 137 and Priotti – paragraph 60)**

11. Regarding **claim 7**, the combination of Shattil and Priotti discloses a method, further including: converting the separated plurality of data streams into the second time domain prior to the synchronizing **(It should be noted that Shattil teaches a second time domain as the output of Figure 4J's 462 is M data streams in the time domain as the combiners and integrators serve as an IFFT as illustrated in paragraphs 142 and 193. Also in Figure 11 the output of the IFFT is a second time domain and Priotti Figure 1, element 114)**

12. Regarding **claim 9**, Shattil discloses a wireless access point performs the separating the data streams. (**See Figure 13B**)

13. Regarding **claim 10**, Shattil discloses an article wherein the information, when accessed, results in the machine performing: computing a frequency response for a number of channels corresponding to the plurality P of asynchronous data streams. (**See Figures 4J, 10B, and 11 and see paragraphs 141, 142, 186, and 187.**)

14. Regarding **claim 11**, the Shattil discloses an article wherein the information, when accessed, results in the machine performing: converting the separated plurality of data streams in the frequency domain into a separated plurality of data streams in the second time domain. (**It should be noted that Shattil teaches a second time domain as the output of Figure 4J's 462 is M data streams in the time domain as the combiners and integrators serve as an IFFT as illustrated in paragraphs 142 and 193. Also in Figure 11 the output of the IFFT is a second time domain**)

15. Regarding **claim 12**, the combination of Shattil and Priotti discloses an article, wherein the information, when accessed, results in the machine performing: synchronizing at least one of the separated pluralities of data streams after detecting a presence of a short preamble. (**This is conventional synchronizing technique as admitted by Applicant in paragraph 46 of the specification**)

16. Regarding **claim 13**, the combination of Shattil and Priotti discloses an article, wherein the information when accessed results in the machine performing estimating a coarse frequency set. (**See Priotti – Paragraph 5**)

17.. Regarding **claim 16**, Shattil discloses an apparatus, wherein the module to separate further includes: a module to perform a fast Fourier transform on the combined plurality P of asynchronous data streams (**See Figure 4J element 472**); and a module to perform an inverse fast Fourier transform on at least one of the separated plurality of data streams (**See Figure 11 elements 1106 and also please note that the combiners and integrators serve as an IFFT as in paragraphs 142 and 193.**).

16. Regarding **claim 17**, the combination of Shattil and Priotti discloses wherein the synchronization module is to receive at least one of the separated plurality of data streams after processing by a module capable of performing an inverse fast Fourier transform. the synchronization module is to receive at least one of the separated plurality of data streams after processing by a module capable of performing an inverse fast Fourier transform. (**See Priotti Figure 1, elements 114 and 116**)

19. Regarding **claim 23**, Shattil discloses a system wherein the plurality Q of antennas form a portion of a multiple-input, multiple-output (MIMO) system. (**See Figures 6B and 11 and paragraphs 145 and 156**)

20. Regarding **claim 24**, Shattil discloses a system further including a wireless access point coupled to the plurality Q of antennas. (**See Figures 11B and 13B**)

21. Regarding **claim 25**, the combination of Shattil and Priotti discloses a system wherein the wireless access point is to train at least one channel for at least some of a plurality of P users associated with the combined plurality P of asynchronous data streams. (**See Priotti – Figure 1, elements 114 and 116 and further what the Applicant shows as training is done on the transmitter side and has nothing to do**

with the base claim which deals with a receiver and further training for the purpose of synchronizing transmitted signals as shown by Applicant is a must for SDMA systems which have almost synchronous signals multiplexed and requires constant calibrations and Shattil's system supports SDMA as illustrated in paragraph 37. See for instance Shattil (US Pub. No. 20020150070 paragraph 104)

22. Regarding **claim 26**, Shattil discloses a system, further including: a processor to form a $Q \times P$ channel matrix. (**See Figures 5B, 6B, and 11 and paragraph 156**)

23. **Claims 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shattil in view of Priotti as applied to claim 14 above, and further in view of Shattil II (US Pub. No. 20020150070), hereinafter referred to as Shattil II.

24. Regarding **claim 15**, the combination of Shattil and Priotti fails to expressly disclose an apparatus where in the module to separate further includes: a spatial demultiplexed to provide the separated plurality of data streams.

Shattil II teaches an apparatus for using frequency diversity to separate wireless communication signals.

Shattil II discloses an apparatus wherein the module to separate further includes: a spatial demultiplexer to provide the separated plurality of data streams. (**Figure 2, element 206 and see also paragraphs 50 and 53.**)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Shattil's and Priotti's apparatus by incorporating a spatial demultiplexer to provide the separated plurality of data streams.

The motivation to use a spatial demultiplexer is to separate a particular signal from the interfering N-1 signals in the frequency domain as stated by Shattil II in paragraph 50.

25. **Claims 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shattil (US Pub. No. 2004/0086027 A1), hereinafter referred to as Shattil in view of Schill et al (US Pub. No. 2003/0227985), hereinafter referred to as Schill and Shattil II (US Pub. No. 2003/0227985), hereinafter referred to as Shattil II.

26. Regarding **claim 19**, Shattil discloses an apparatus including: a module to perform a fast Fourier Transform on a combined plurality P of asynchronous data streams (**See Figure 4J – element 472 and Figure 10B and element 1071**); a module to perform an inverse fast Fourier transform on at least one of the separated plurality of data streams so as to separate, in a frequency domain, the combined plurality P of asynchronous data streams received at substantially a same time into the separated plurality of data streams. (**It should be noted that Shattil teaches a second time domain as the output of Figure 4J's 462 is M data streams in the time domain as the combiners and integrators serve as an IFFT as illustrated in paragraphs 142 and 193. Also in Figure 11 the output of the IFFT is a second time domain**)

Shattil fails to expressly disclose a spatial demultiplexer to provide a separate plurality of data streams associated with the combined plurality P of asynchronous data streams. (Shattil effectively teaches a spatial demux but fails to refer to it as a spatial demux.)

Shatill II discloses a spatial demultiplexer to provide a separate plurality of data streams associated with the combined plurality P of asynchronous data streams. (Figure 2, element 206 and see also paragraphs 50 and 53.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shattil's apparatus by incorporating a spatial demultiplexer to provide a separate plurality of data streams associated with the combined plurality P of asynchronous data streams. The motivation to use a spatial demultiplexer is to separate at least one desired signal from at least N-1 interfering signals as stated by Shattil II in paragraph 50.

Shattil also fails to teach a module to synchronize at least one of the separated plurality of data streams in a time domain.

Schill teaches interference reduction for simulcast signals.

Schill discloses a module to synchronize at least one of the separated plurality of data streams in a time domain. (See Figure 2 elements 13 and 21 are the synchronization module in the second time domain after the IFFT 10 in Figure 2)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shattil's apparatus by incorporating a module to synchronize at least one of the separated plurality of data streams in a time domain. The motivation to synchronize in the time domain prior to preprocessing the signals in the receiver or post- processing the signals in the receiver is to prevent errors in the future due to lack of synchronization.

27. Regarding **claim 20**, Shattil discloses an apparatus wherein at least some of the separated pluralities of data streams include a plurality of OFDM symbols. (See paragraphs 227 and 233)

28. Regarding **claim 21**, the combination of Shattil and Schill discloses an apparatus wherein the synchronization module is to receive at least one of the separated plurality of data streams after processing by a module capable of performing an inverse fast Fourier transform. (**Shattil Figure 11 element 1106 is an IFFT and Schill Figure 2 element 20 is IFFT and elements 13 and 21 constitute the synchronization module.**)

Response to Arguments

Applicant's arguments with respect to all independent claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H. To can be reached on 571 272 7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HM
11-08-2007



DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 26